

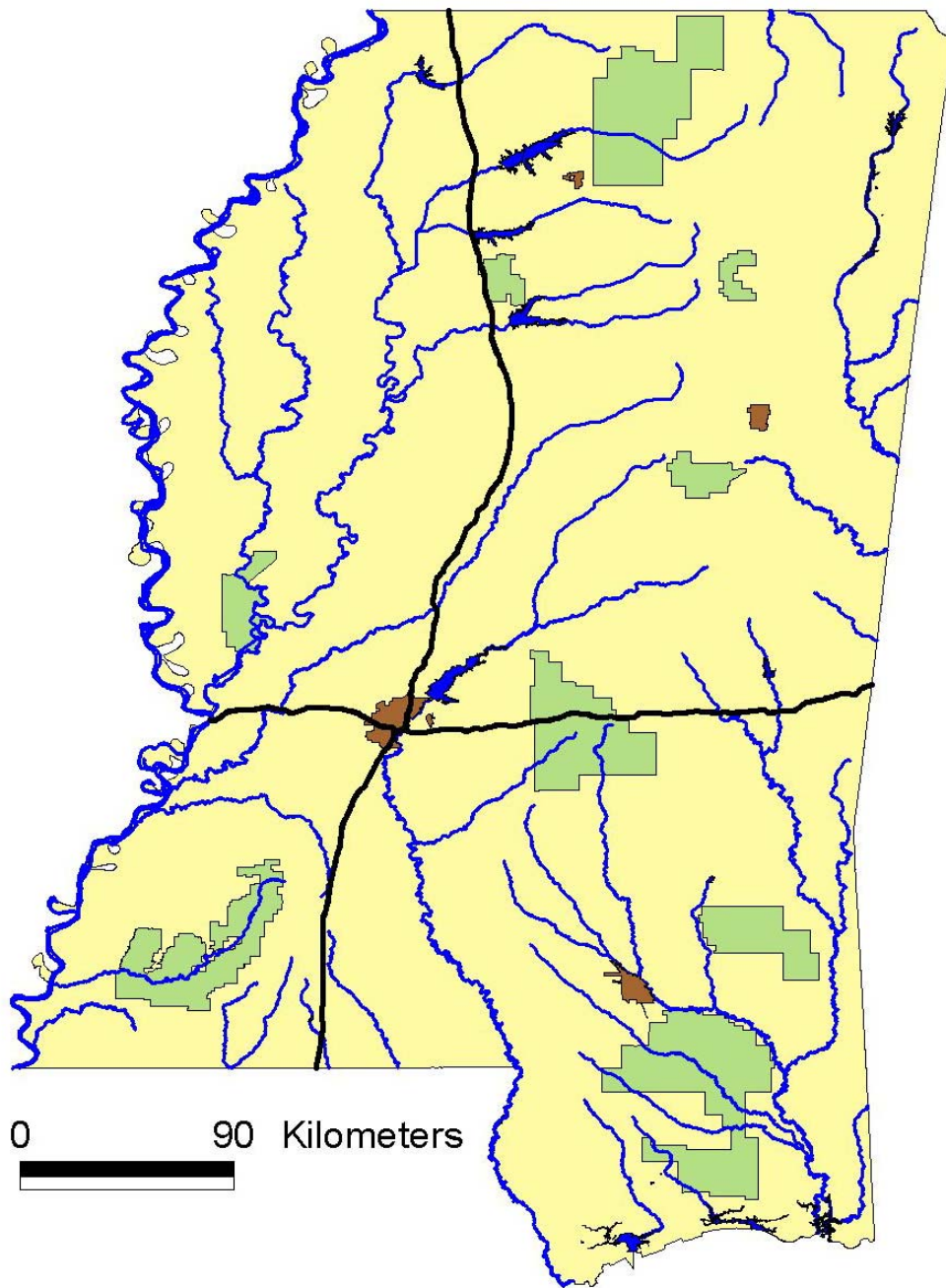
Stream crayfish in Mississippi: who's where and why



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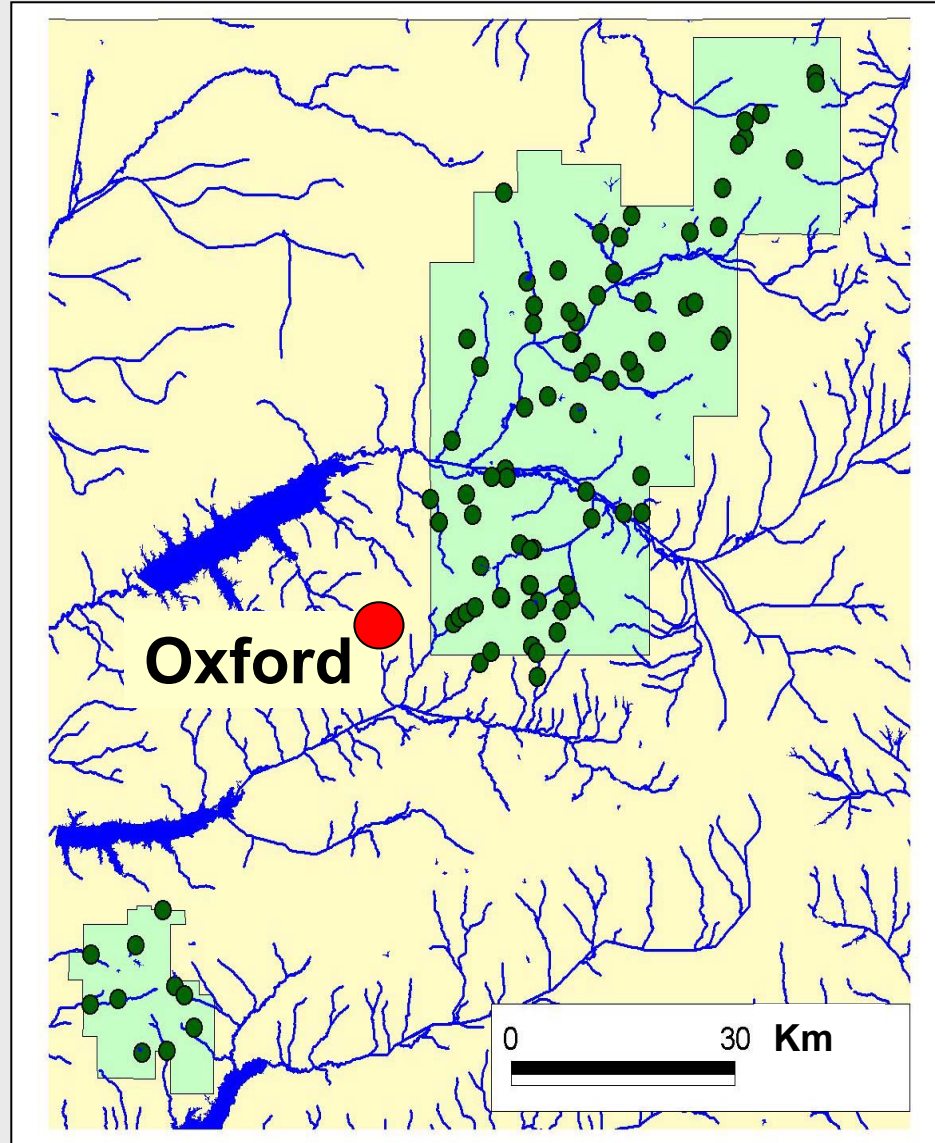
Presented to: Alabama Fisheries Assoc, Feb. 22-24, Orange Beach, AL



METHODS

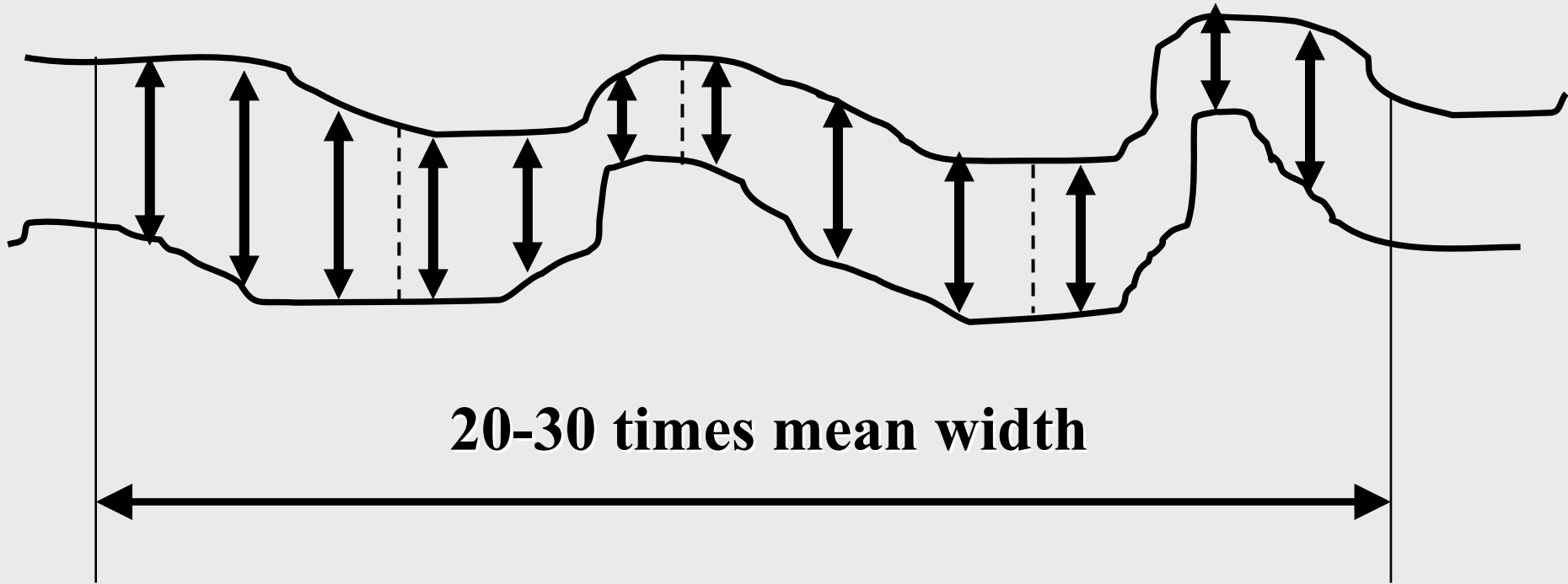


Holly Springs NF sites 1999-2000





Habitat



- **Transect endpoints**
width, bank height, bank veg
- **Points along transect**
depth, current, % canopy, substrate,
+/- of wood, detritus, and aquatic veg.
- **Watershed area**

RESULTS



Crayfish diversity

1,200 specimens of at least 9 species



Orconectes chickasawae



Procambarus vioscai



Procambarus ouachitae



Procambarus hayi



Procambarus acutus

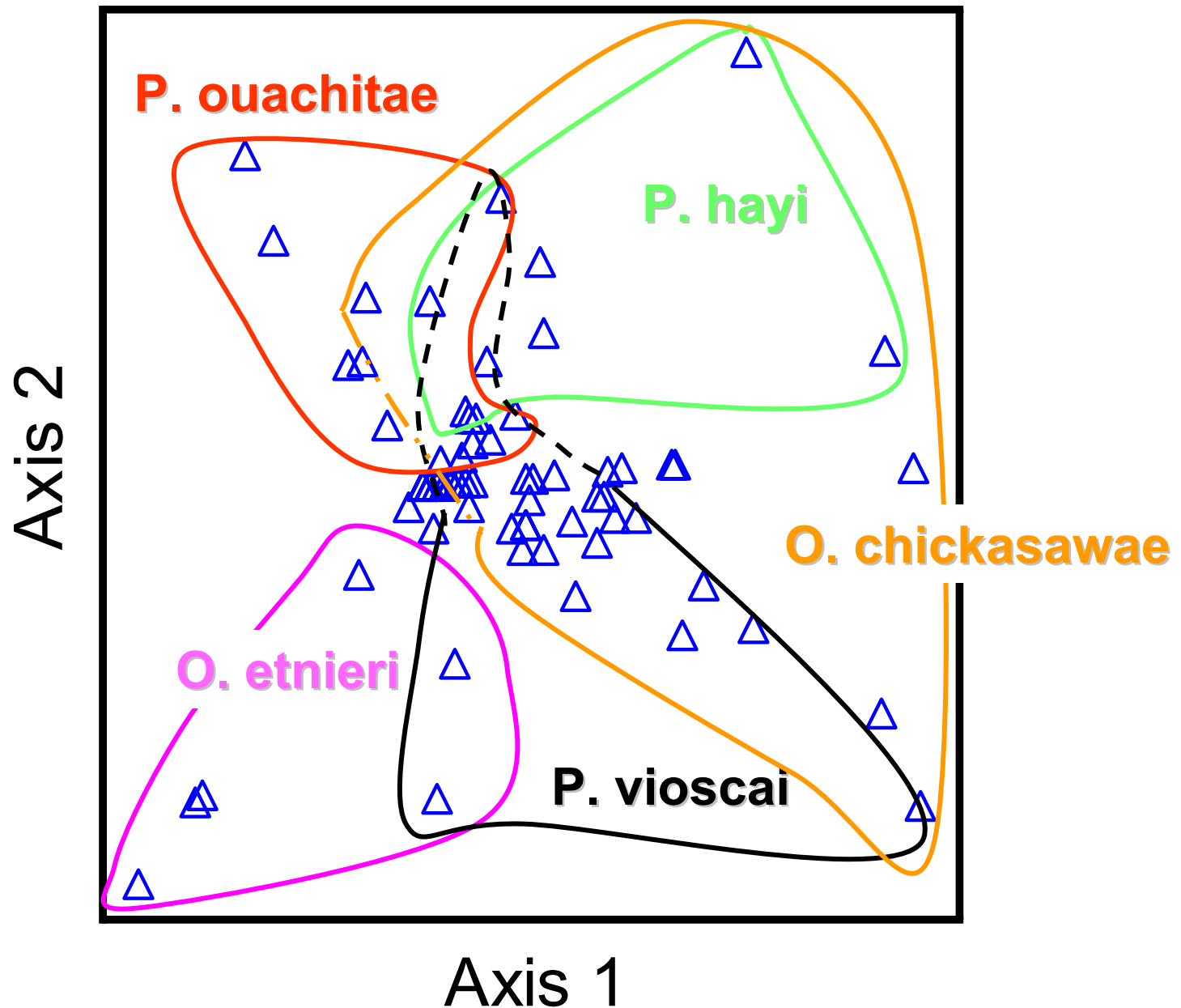


Cambarus diogenes

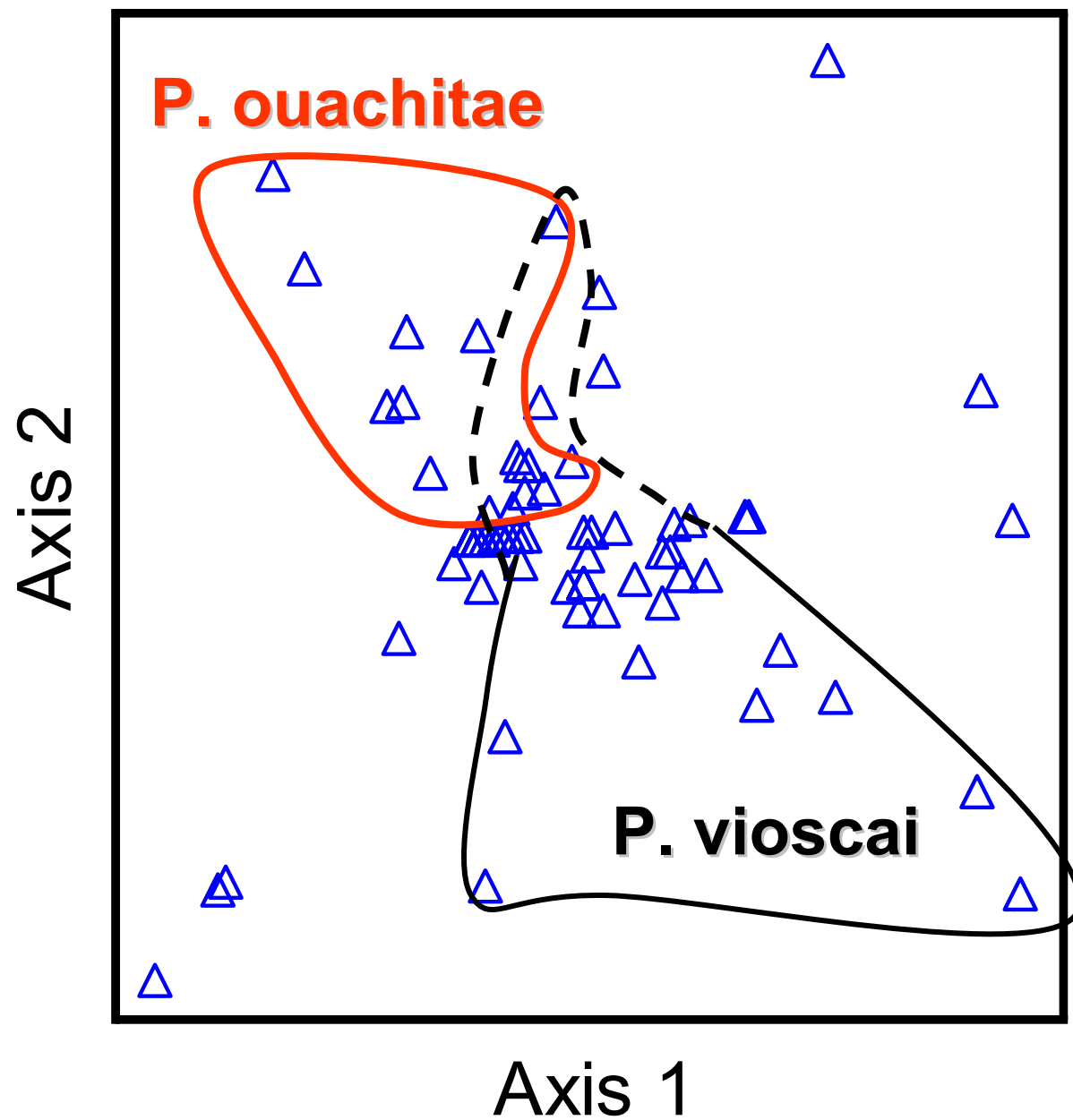
Co-occurrence analysis

- **Significant structuring of crayfish assemblages**
 - Co-occurrence $C = 8.9$, $P\text{-value} = 0.049$
 - Checkerboard score = 20 , $P\text{-value} = 0.319$
 - **Species combinations = 21, $P\text{-value} = 0.01$**

PCA plot of sample sites in species space







Crayfish and reach-scale habitat

- **PCA and Mantel tests**
 - **Crayfish density related only to stream size variables (not to wood, veg, substrate, canopy)**

Crayfish and reach-scale habitat

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 - Crayfish density related only to stream size variables
- **Correlations: density by sp. vs. stream size**
 - Most species, $r < 0$
 - *P. vioscai*, *P. ouachitae* no sig. correlation
 - *P. hayi* $r < 0$ with area but not depth

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- **Species-area relationship negative!**

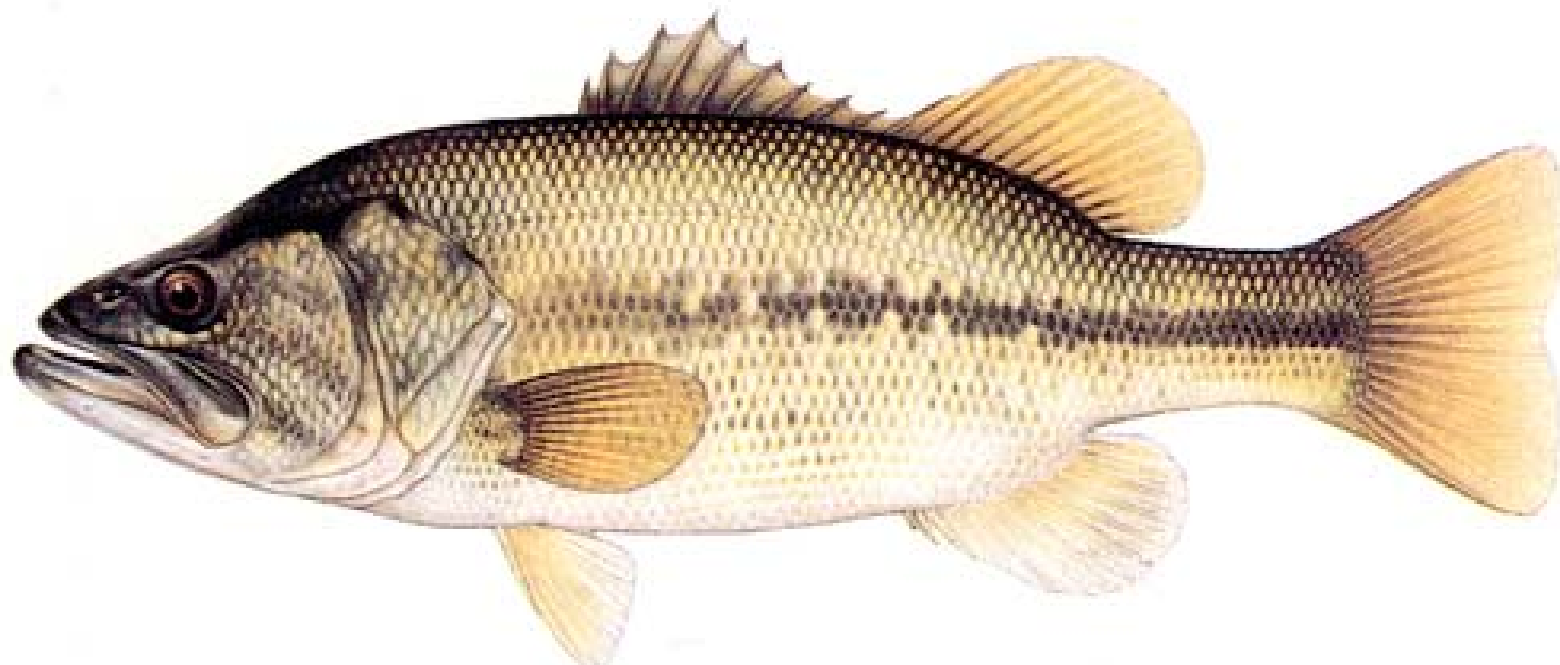
POSSIBLE EXPLANATIONS









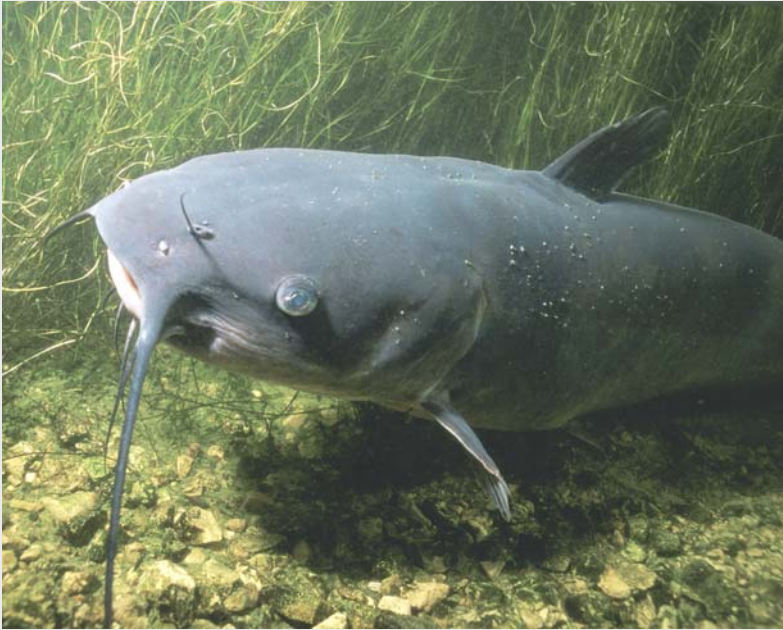


William Pflieger

Catfish predation experiment



Experimental design



	No shelter	Shelter
No catfish	4	4
One catfish	4	4

- 2 trials
- 3 weeks each
- Count survivors nearly daily

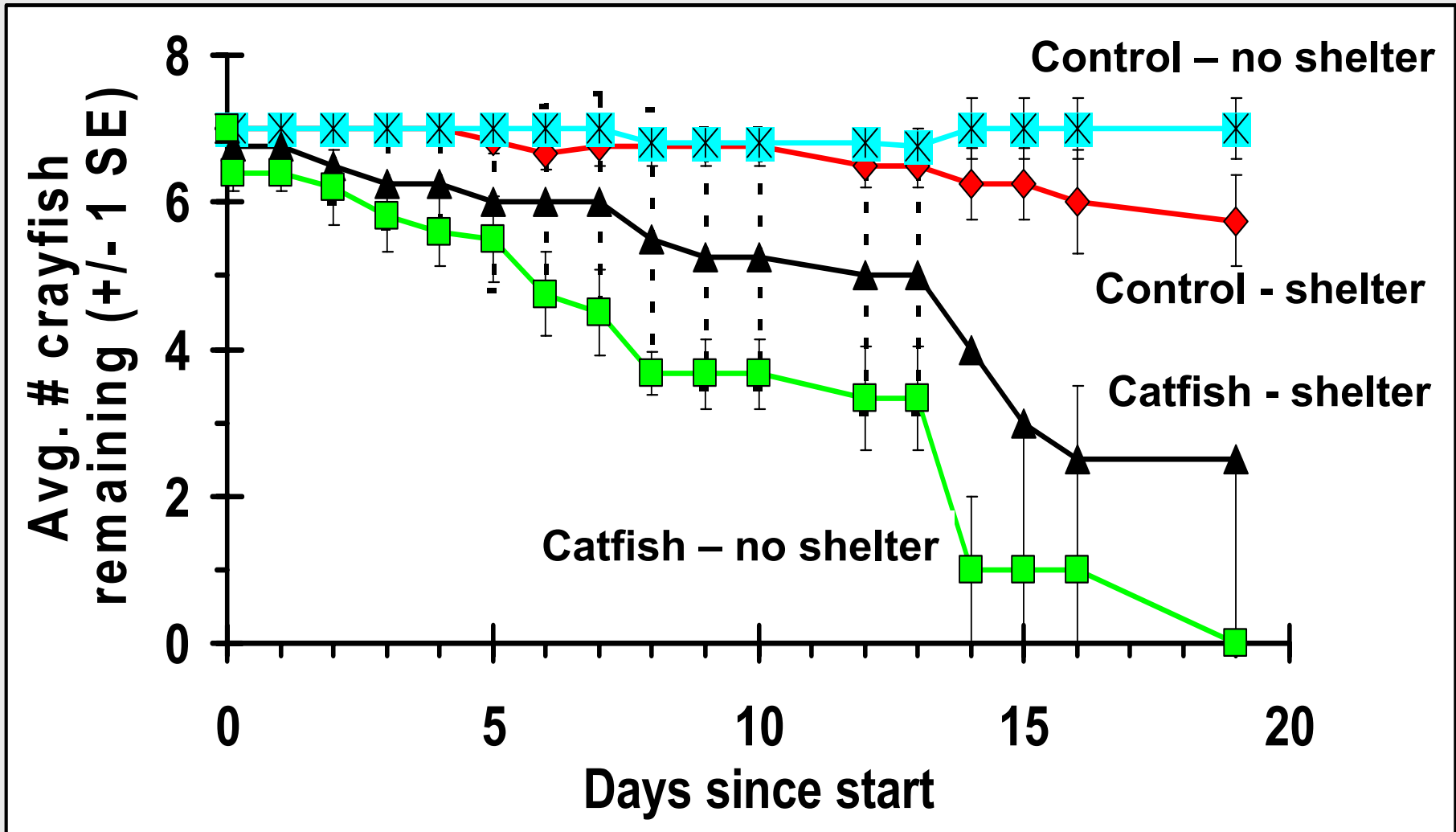


Results – trial one

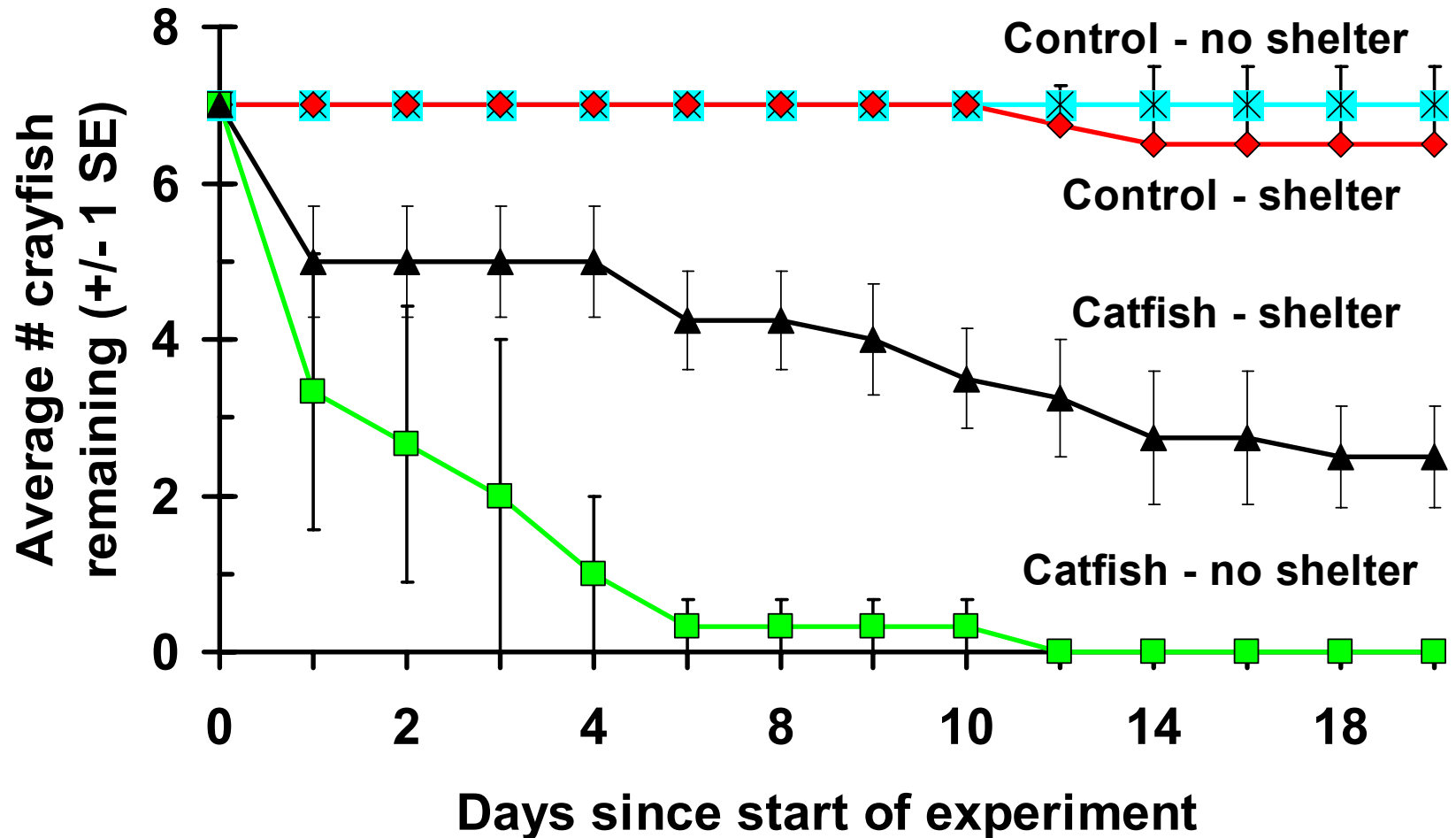
- Catfish predation low on large *P. hayi*.
- Catfish will jump out of tanks!

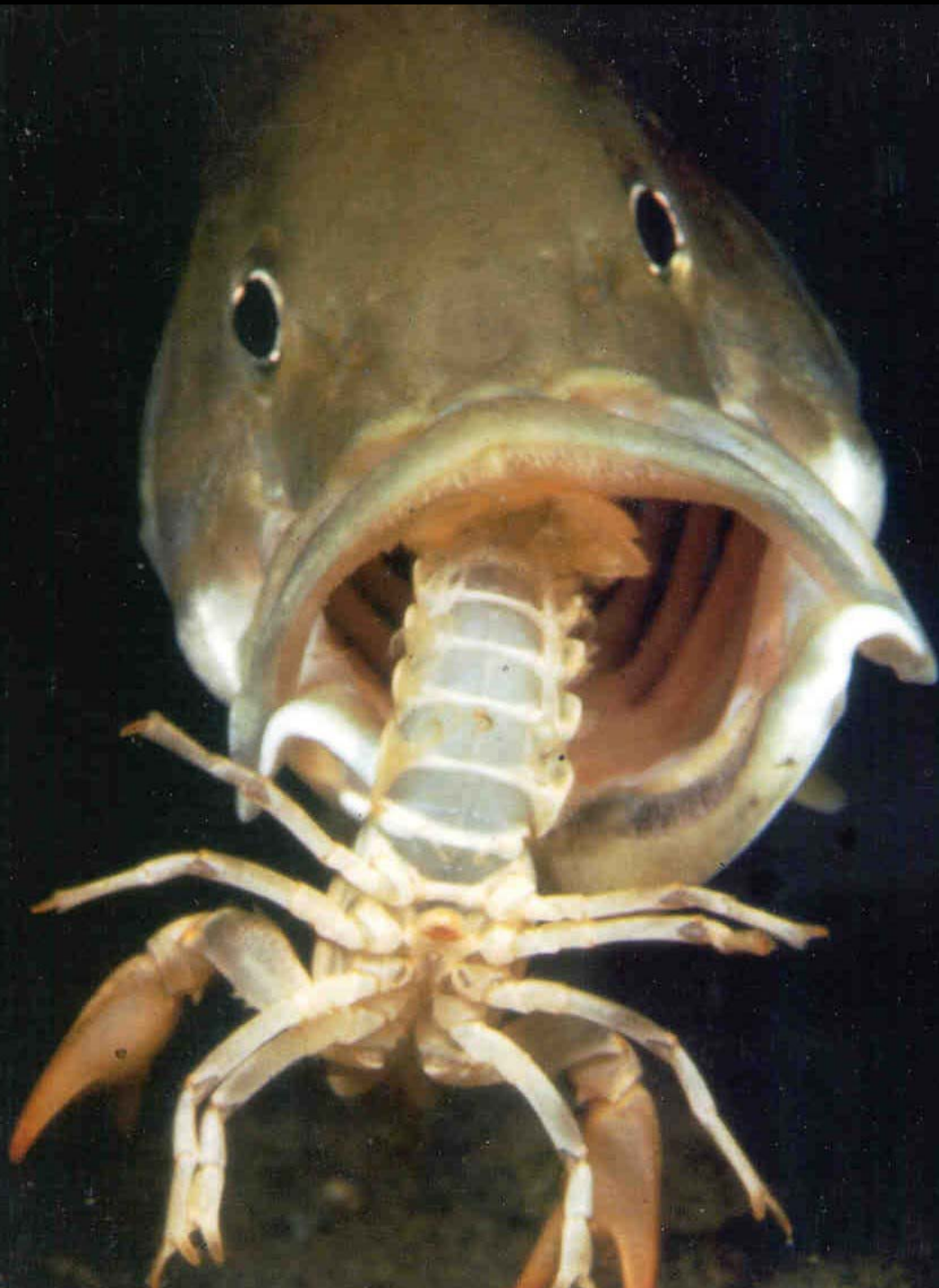


Results – trial 1



Results – trial 2









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